

**WHAT IS CLAIMED IS**

1. A fabric interconnect (10) for use to interconnect a garment (14) having fabric electrodes (30) and an electronics enclosure (12) having a conductive area (26) on its outer surface (28) that is connected to a circuit, said fabric interconnect (12) comprising:
- 5 a portion of the garment (14) including
- a first inner surface (22), which is substantially electrically conductive, coupled to the fabric electrodes(30); and
- a second inner surface (24) that is substantially electrically non-conductive,
- 10 wherein the first inner surface (22) and the second inner surface (24) are seamlessly manufactured to form a chamber, and wherein when the electronics enclosure (12) is inserted into the chamber in a predetermined position, causes the conductive area (26) of the electronics enclosure (12) and the first inner surface (22) to make contact and form an interconnection between the fabric electrodes (30) of the garment (14) and the circuit.
- 15
2. The fabric interconnect (10) of claim 1, wherein a force is applied to the chamber to position the electronics enclosure (12) to the predetermined position.
3. The fabric interconnect (10) of claim 1, wherein a force is applied to the electronics enclosure (12) to position the electronics enclosure (12) to the predetermined position.
- 20
4. The fabric interconnect (10) of claim 1, wherein the first (22) and second (24) inner surfaces are flexible.
- 25
5. The fabric interconnect (10) of claim 1, wherein the first and second inner

surfaces are elastic.

6. The fabric interconnect (10) of claim 1, wherein the chamber has a tube-like shape.

5

7. The fabric interconnect (10) of claim 3, wherein the force is a rotating force.

8. The fabric interconnect (10) of claim 3, wherein the force is an insertion or retraction force between the electronics enclosure (12) and the seamless chamber.

10

9. The fabric interconnect (10) of claim 1, wherein the first inner surface (22) is a plurality of first inner surface (22), the second inner surface is a plurality of second inner surfaces (24) and each of the plurality of first inner surface (22) is aligned with one of the plurality of second inner surfaces (24).

15

10. The fabric interconnect (10) of claim 1, wherein the electronics enclosure is a portion of a Heart Rate Monitor.

11. An electronics enclosure (12) for use with a fabric interconnect (10) in a garment (14) having fabric electrodes (30), said electronics enclosure (12) comprising:

a casing (28) including a substantially electrically conductive area (26); and

20

a circuit coupled to the conductive area,

wherein the conductive area (26) is configured to be inserted into a seamless chamber of the fabric interconnect (10), in a predetermined position, and causes the conductive area of the electronics enclosure (12) and a conductive inner surface (22) of the seamless chamber of the fabric interconnect (10) to make contact and form an

25 interconnection between the fabric electrodes (30) of the garment (14) and the circuit.

12. The electronics enclosure (12) of claim 10, further including an indicator (102) to indicate a functionality of the electronics enclosure (12).

13. The electronics enclosure (12) of claim 10, wherein the indicator (102) is a display (102).

5

14. The electronics enclosure (12) of claim 10, wherein the electrically conductive area (26) is a plurality of electrically conductive areas (26), and further including a plurality of electrically non-conductive areas on the casing (28) and each of the plurality of electrically conductive areas (26) is aligned with one of the plurality of electrically non-conductive areas.

10

15. The electronics enclosure (12) of claim 13, wherein the functionality of the electronics enclosure (12) corresponds to a predetermined position in the seamless chamber.

16. The electronics enclosure (12) of claim 15, wherein conductive inner surface (22) of the seamless chamber is a plurality conductive inner surfaces (22), and the seamless chamber further includes a plurality of non-conductive inner surfaces (26) and each of the plurality of conductive inner surface (22) is aligned with one of the plurality of non-conductive inner surface (26).

15

17. The electronics enclosure (12) of claim 15, wherein the functionality of the electronics enclosure (12) corresponds to a predetermined number of conductive inner surfaces (22) of the seamless chamber in contact with predetermined number of electrically conductive areas (26) of the electronics enclosure (92).

20